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UNITED STATES SPECIAL OPERATIONS COMMAND 23.B Small Business Innovation Technology Transfer (STTR) Phase I Proposal Submission Instructions

Join us for a virtual Q&A with our Technical Point of Contact

4 May 2023: SOCOM23B-001 at 3:00 EDT

INTRODUCTION

The United States Special Operations Command (USSOCOM) seeks small businesses with strong research and development capabilities to pursue and commercialize technologies needed by Special Operations Forces through the Department of Defense (DoD) STTR 23.B Program Broad Agency Announcement (BAA).

Offerors responding to a topic in this BAA must follow all general instructions provided in the DoD STTR Program BAA. USSOCOM requirements in addition to or deviating from the DoD Program BAA are provided in the instructions below.

Proposers are encouraged to thoroughly review the DoD Program BAA and register for the DSIP Listserv to remain apprised of important programmatic and contractual changes.

- The DoD Program BAA is located at: <https://www.defensesbirsttr.mil/SBIR-STTR/Opportunities/#announcements>. Be sure to select the tab for the appropriate BAA cycle.
- Register for the DSIP Listserv at: <https://www.dodsbirsttr.mil/submissions/login>.

The Offeror is responsible for ensuring that their proposal complies with the requirements in the most current version of these instructions. Prior to submitting your proposal, please review the latest version of these instructions as they are subject to change before the submission deadline.

The Government may withdraw from negotiations at any time for any reason to include matters of national security (foreign persons, foreign influence or ownership, inability to clear the firm or personnel for security clearances, or other related issues).

The USSOCOM SBIR/STTR Program Office will be hosting a virtual USSOCOM Industry Day on 4 May 2023 to further specify requirements and stimulate small business/research institute partnership-building. Please visit https://events.sofwerx.org/sbir23-2_sttr23-b/ register.

PHASE I PROPOSAL GUIDELINES

The Defense SBIR/STTR Innovation Portal (DSIP) is the official portal for DoD SBIR/STTR proposal submission. Offerors are required to submit proposals via DSIP; proposals submitted by any other means will be discarded. Detailed instructions regarding registration and proposal submission via DSIP are provided in the DoD STTR Program BAA.

Proposal Volumes are key in the qualification of the proposal. Offerors shall complete each of the following volumes: (1) Cover Sheet, (2) Technical Volume, (3) Cost Volume, (4) Company Commercialization Report, (5) Pitch Day Presentation, and (6) Fraud, Waste and Abuse Training.

Please Note:

1. It is the Offeror's responsibility to make sure all DoD and USSOCOM instructions are followed, and all required documents are submitted. The DSIP (DoD's SBIR/STTR proposal submission website)

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does NOT ensure your submission is in accordance with both DoD and USSOCOM instructions. The DSIP notice “100% submitted” means that the upload process is complete; it does NOT mean the proposal submission complies with the stated instructions and that all required documents are successfully uploaded.

2. USSOCOM does not assist Offerors with proposal preparation nor does USSOCOM review proposals for completeness. We recommend you use your local and state resources for assistance. (See DoD Program BAA for resources information.)
3. USSOCOM has encountered issues while downloading proposals due to lengthy file names. The Offeror shall not use more than 20 characters to include spaces in any of the proposal documents titles.
4. **USSOCOM does NOT require a Government Letter of Support (LoS). Any Government LoS provided will deem the proposal to be non-responsive (Disqualified).**

Cover Page (Volume 1)

Volume 1 is created as part of the DoD Proposal Submissions process. Follow all instructions provided in the DoD STTR Program BAA and DSIP.

Technical Volume (Volume 2)

The Technical Volume is not to exceed (5) pages and must follow the formatting requirements provided in the DoD STTR Program BAA titled “DoD STTR 23.B Program BAA”. USSOCOM will only evaluate the first (5) pages of the Technical Volume, additional pages will not be considered or evaluated.

Content of the Technical Volume:

Required items are specified in the DoD STTR Program BAA Phase I Format of Technical Volume instructions, reference <https://www.defensesbirsttr.mil/SBIR-STTR/Opportunities/> then scroll to the bottom of the page and click on the tab titled “Supporting Documents and Attachments”. At the bottom of the list, select the document titled “Phase I Technical (Vol 2) Sample Template”.

Contract Data Requirement Lists (CDRLs): CDRLs identify which data products must be delivered by the contractor to the Government. Please make sure you read all required CDRLs requirements (each using a DD Form 1423-1) prior to developing your proposal. All five of the required Phase I CDRLs are available on <https://www.socom.mil/SOF-ATL/Pages/sbir.aspx>.

Cost Volume (Volume 3)

The Phase I amount must not exceed \$210,000.00. Costs must be identified on the Proposal Cover Sheet (Volume 1) and in Volume 3. Once the proposal is established in DSIP, the Offeror will have access to the required USSOCOM specific Cost Volume instructions and template.

A minimum of 40% of the research and/or analytical work in Phase I must be conducted by the proposing firm. A minimum of 30% of the research and/or analytical work must be conducted by a not-for-profit (typically an education institution or a laboratory). The percentage of work is measured by both direct and indirect costs as a percentage of the total contract cost.

Please review the updated Percentage of Work (POW) calculation details included in section 5.3 of the DoD Program BAA. USSOCOM will not accept any deviation to the POW requirements on these Phase I topics.

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The cost volume template (volume 3 template) is located on DSIP and <https://www.socom.mil/SOF-ATL/Pages/sbir.aspx>.

The identification of foreign national involvement in a USSOCOM STTR topic is needed to determine if a firm is ineligible for award on a USSOCOM topic that falls within the parameters of the United States Munitions List, Part 121 of the International Traffic in Arms Regulation (ITAR). A firm employing a foreign national(s) (as defined in section titled “Foreign Nationals” of the DoD STTR Program BAA) to work on a USSOCOM ITAR topic must possess an export license to receive a STTR Phase I contract.

Company Commercialization Report (CCR) (Volume 4)

Completion of the CCR in Volume 4 of the proposal submission in DSIP is required. Please refer to the DoD STTR Program BAA for full details on this requirement. Information contained in the CCR will be considered by USSOCOM during proposal evaluations.

Supporting Documents (Volume 5)

In addition to the documentation outlined in the DoD STTR Annual BAA, the following USSOCOM required documents must also be included with Volume 5: (1) PowerPoint presentation, (2) Section K, and (3) Resumes.

1. PowerPoint Presentation: Potential Offerors shall submit a slide deck **not to exceed 15 PowerPoint slides** (inclusive of the cover sheet). The presentation shall not have any videos or links to videos. There is no set format for this document. It is recommended (but not required) that more detailed information is included in the technical volume and higher-level information be included in the slide deck, suitable for a possible presentation. Refer to the “Phase I Evaluations” Section of this instruction for more details.
2. Section K - Titled “Representations, Certifications, and other statements of Offerors”: If Section K is not submitted with the proposal, the proposal will still be considered responsive, but the completed Section K shall be required at the time of award. Section K is available at <https://www.socom.mil/SOF-ATL/Pages/sbir.aspx>.
3. Resumes: Include resumes.

Fraud, Waste and Abuse Training (Volume 6)

Fraud, Waste and Abuse (FWA) training is required for Phase I proposals. Please refer to the DoD SBIR/STTR Program BAA instructions for full details.

DISCRETIONARY TECHNICAL AND BUSINESS ASSISTANCE (TABA)

USSOCOM does not provide Discretionary Technical and Business Assistance for Phase I awards.

INQUIRIES:

USSOCOM does not allow direct communication with the topic authors (differs from the DoD STTR/STTR Program BAA instructions).

During the Pre-Release and Open Periods of the DoD STTR Program BAA, only and all technical questions that enhance the Offerors understanding of the topic’s requirements must be submitted to the online Defense SBIR/STTR Innovation Portal (DSIP) Topic Q&A. All questions and answers submitted to DSIP Topic Q&A will be released to the general public.

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USSOCOM does NOT allow inquirers to communicate directly in any manner to the topic authors (differs from the DoD STTR Program BAA instructions). Only questions pertaining to the proposal preparation instructions should be directed to: sbir@socom.mil. All inquiries must include the topic number in the subject line of the e-mail.

Consistent with DoD STTR instructions, USSOCOM will not answer programmatic questions, such as who the technical point of contact is, the number of contracts to be awarded, the source of funding, transition strategy.

Physical site visits will not be permitted during the Pre-release and Open Periods of the DoD STTR Program BAA.

EVALUATION AND SELECTION

All Offerors will be evaluated in accordance with the evaluation criteria listed in the DoD STTR Program BAA, with the following exceptions:

1. Proposals missing any of the six stated volumes, or those that do not comply with the requirement that 40% of the work is to be executed by the proposing firm and 30% of the work is to be executed by one partnering nonprofit research institution (as stated in Volume 3) of the work conducted by the proposing firm or those proposals that exceed the maximum price allowed as per Table 1 of these instructions will be considered non-responsive. Non-responsive proposals will not be evaluated.
2. The technical evaluation will utilize the Evaluation Criteria provided in DoD STTR Program BAA instructions. The Technical Volume and PowerPoint Presentation slide deck will be reviewed holistically.

The technical evaluation is performed in two parts:

Part I: The evaluation of the Technical Volume will utilize the Evaluation Criteria provided in the DoD STTR Program BAA. Once the evaluations are complete, all Offerors will be notified in a timely manner.

Part II: Selected offerors **may** receive an invitation to present their slide deck (30-minute presentation time/30-minute Government question and answer period) to the USSOCOM technical evaluation team, using virtual teleconference. This will be a technical presentation of the proposed solution **ONLY**. The key personnel listed in the proposal should represent the presentation and responding to the questions of the evaluation team. This presentation is NOT intended for business development personnel, it is purely technical. Selected offerors shall restrict their Pitch Day presentations to the 15-page PowerPoint presentation submitted with the respective proposals. There will be no changes or updates to the presentations from what was proposed. This presentation will complete the evaluation of the proposal against the criteria listed in the DoD STTR Program BAA.

3. The Cost Volume (Volume 3) evaluation:
For this Phase I, the award amount is set at a not to exceed (NTE) amount and a technical evaluation of the proposal cost will be completed to assess price fair and reasonableness. The team will assess the technical approach presented for the effort based on the number of labor hours by labor categories, the key personnel level of involvement, materials, subcontractors, and consultants (scope of work, expertise, participation, and proposed effort), and other direct cost as proposed.

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Additionally, input on technical aspects of the proposals may be solicited by USSOCOM from non-Government consultants and advisors who are bound by appropriate non-disclosure requirements. When appropriate, non-Government advisors may have access to Offeror's proposals and may be utilized to objectively review a proposal in a particular functional area and provide comments and recommendations to the Government's decision makers. They may not establish final assessments of risk, or rate or rank Offerors' proposals. All advisors shall comply with procurement Integrity Laws and shall sign Non-Disclosure and Rules of Conduct/Conflict of Interest statements. The Government shall take into consideration requirements for avoiding conflicts of interest. Submission of a proposal in response to this request constitutes approval to release the proposal to Government support contractors.

Offerors will be notified of selection or non-selection status for a Phase I award within 90 days of the closing date of this BAA topic by the USSOCOM Contracting Office. This notification will come by e-mail to the Corporate Official identified by the Offeror during proposal submission. The Government will also notify the Offerors if their proposal is considered non-responsive (disqualified).

A non-selected Offeror can make a written request to the Contracting Officer, within 30 calendar days of receipt of notification of non-selection, for informal feedback. The Contracting Officer will provide informal feedback after receipt of an Offeror's written request rather than a debriefing as specified in the DoD STTR Program BAA instructions.

Refer to the DoD STTR Annual BAA for procedures to protest the Announcement.

As further prescribed in FAR 33.106(b), FAR 52.233-3, Protests after Award should be submitted to: sbir@socom.mil.

PATH TO PHASE II

Phase II proposals may only be submitted by Phase I awardees. In the event that the Phase II of a topic is cancelled, Phase I awardees will be informed by USSOCOM and Phase II proposals will not be accepted. To obtain the Phase II requirements, refer to the Contract Data Requirements List (CDRL) A004. The Final Report will be due on or before 6 months of the start of the Period of Performance (PoP) In Accordance With (IAW) CDRL A003. Your Phase II proposal will be due on or before the 195th day of the start of the PoP IAW CDRL A005.

All CDRLs are available on <https://www.socom.mil/SOF-ATL/Pages/sbir.aspx>. There are two different attachments for CDRL 5. Please refer to the section titled "Award and Contract Information" for the contracting path pertaining to the topic.

The Government reserves the right to issue any of the following type of awards for Phase II:

- I. FAR type contract
- II. Non-FAR based fixed price (level of effort type):
 - a. Other Transactions Agreements (OTA). Successful completion of the prototype under an OTA may result in a follow-on production OTA or contract. Successful completion of the prototype is defined as meeting one or more threshold requirements.

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AWARD AND CONTRACT INFORMATION

Table 1: Consolidated STTR Topic Information

Topic	Technical Volume (Vol 2)	Additional Info. (Vol 5)	Period of Performance	Award Amount	Contract Type
<i>Phase I</i> SOCOM23B-001	Not to exceed 5 pages	15 page PowerPoint	Not to exceed 7 months	NTE \$210,000.00	Firm-Fixed- Price

The Government will conduct evaluations and selections for STTR Phase I topic award(s) listed in this BAA. SOCOM23B-001 awards will be made by USSOCOM STTR Contracting Officer.

ADDITIONAL INFORMATION

Phase I proposals shall NOT include:

- 1) Any travel for Government meetings. All meetings with the Government will be conducted via electronic media.
- 2) Government furnished property or equipment.
- 3) Priced or Unpriced Options.
- 4) "Basic Research" (or "Fundamental Research") defined as a "Systematic study directed toward greater knowledge or understanding of the fundamental aspects of phenomena and/or observable facts without specific applications toward processes or products in mind."
- 5) Discretionary Technical and Business Assistance (TABAs)
- 6) Letters of Support

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SOCOM STTR 23.B Topic Index

SOCOM23B-001 TITLE: AI/ML Aided Aviation Sensors for Cognitive and Decision Optimization

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SOCOM23B-001

TITLE: AI/ML Aided Aviation Sensors for Cognitive and Decision Optimization

The technology within this topic is restricted under the International Traffic in Arms Regulation (ITAR), which controls the export and import of defense-related material and services. Offerors must disclose any proposed use of foreign nationals, their country of origin, and what tasks each would accomplish in the statement of work in accordance with section 5.4.c.(8) of the solicitation. Additionally, Offerors will describe compliance mechanisms offerors have in place or will put in place to address any ITAR issues that arise during the course of agreement administration.

OBJECTIVE: Over the course of the last forty years aircraft have developed, acquired, and fielded sensor systems that span the electromagnetic spectrum (for example: Ultraviolet, Electro-Optics, Infra-Red, Radio Frequency). Historically, each system addressed a unique problem, and consequently was developed and manufactured by a distinct Original Equipment Manufacturer to address the corresponding requirement. While successfully accomplishing their siloed objectives, the data and information generated from these systems have yet to be leveraged by advances in Artificial Intelligence (AI) and Machine Learning (ML), particularly in Deep Learning sub-fields such as Computer Vision and Recommendation Systems. As a result, aviators today are inundated with unstructured data that prohibits the operator to make the final decision on how and when to use the information presented, and correspondingly inhibits peak performance. The objective of this topic is to develop applied research toward an innovative capability to deploy AI/ML to the edge of aircraft and their corresponding systems to enable a wave of new capabilities that increase lethality, safety, and mission effectiveness, while at the same time leveraging the large capital investments in already fielded suites of sensors.

IMPORTANT: For SOCOM instructions: please visit: <https://www.defensesbirsttr.mil/SBIR-STTR/Opportunities/>. Go to the bottom of the page and click the "DoD STTR 23.B" tab. Once there, go to the SOCOM STTR 23.B document.

DESCRIPTION: There are several key innovative tasks required for this approach: The first is the establishment of the compute environment with host operating system necessary to enable the second key task, a Docker like platform where discrete sensor and data streams can be made modular and open source, to finally feed into the third task, tailorable AI/ML algorithms that leverage discrete streams of data into actionable information. As a part of this feasibility study, the proposers shall address all viable overall system design options with respective specifications on the key system attributes.

PHASE I: Conduct a feasibility study to assess what is in the art of the possible that satisfies the requirements specified in the above paragraphs entitled "Objective" and "Description."

The objective of this USSOCOM Phase I STTR effort is to conduct and document the results of a thorough feasibility study ("Technology Readiness Level 3") to investigate what is in the art of the possible within the given trade space that will satisfy a needed technology. The feasibility study should investigate all options that meet or exceed the minimum performance parameters specified in this write up. It should also address the risks and potential payoffs of the innovative technology options that are investigated and recommend the option that best achieves the objective of this technology pursuit. The funds obligated on the resulting Phase I STTR contracts are to be used for the sole purpose of conducting a thorough feasibility study using scientific experiments and laboratory studies as necessary. Operational prototypes will not be developed with USSOCOM STTR funds during Phase I feasibility studies. Operational prototypes developed with other than STTR funds that are provided at the end of Phase I feasibility studies will not be considered in deciding what firm(s) will be selected for Phase II.

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PHASE II: Develop, install, and demonstrate a prototype system determined to be the most feasible solution during the Phase I feasibility study on the application of AI/ML techniques for Aviation Sensors in order to optimize cognitive function and decision aiding.

PHASE III DUAL USE APPLICATIONS: This system could be used in a broad range of military applications where legacy sensor systems have been developed, but can be enhanced through the application of AI/ML. Examples include the fusion and analysis of multiple sensor inputs to enhance and analyze safer vehicle traffic on roadways; cognitive aiding through the application of AI/ML for sensor data fusion in commercial aviation, and enhanced aerial surveillance and analysis of terrain for the purposes of managing deforestation, smart farming, or forest fire prevention.

REFERENCES:

1. [Army Pursues Sensor-Related Artificial Intelligence Effort, 18 November 2022, https://www.afcea.org/signal-media/defense-operations/army-pursues-sensor-related-artificial-intelligence-effort](https://www.afcea.org/signal-media/defense-operations/army-pursues-sensor-related-artificial-intelligence-effort)
2. [How can AI/ML improve sensor fusion performance? https://www.sensortips.com/featured/how-can-ai-ml-improve-sensor-fusion-performance-faq/](https://www.sensortips.com/featured/how-can-ai-ml-improve-sensor-fusion-performance-faq/)
3. [AI: how it's delivering sharper route planning, https://aerospaceamerica.aiaa.org/features/ai-how-its-delivering-sharper-route-planning/](https://aerospaceamerica.aiaa.org/features/ai-how-its-delivering-sharper-route-planning/)

KEYWORDS: Artificial Intelligence; Machine Learning; automation; synthetic data generation; data labeling; computer vision; deep learning; decision aiding, target recognition